

REMARKS

Entry of the foregoing amendments and reconsideration of the above-identified application are respectfully requested, in view of the remarks that follow.

I. Status of the Claims:

Claims 1-10 are currently pending in this application.

By this response, claims 1 and 6 have been amended without introducing new matter.

II. Rejections Under 35 U.S.C. §103:

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,571,022 to Okisu, *et al.* (hereafter "Okisu") in view of EP 1,037,458 to Lin (hereafter "Lin").

With respect to claim 1, at least the features of (1) "an image sensing element having a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by a plurality of divisional exposure operations", and (2) "pixel signals [are] read out from the first light receiving area and the second light receiving area via a same channel", have been rejected by the Office Action dated 10/29/2008, as being disclosed by the combination of Okisu in view of Lin. Applicants respectfully traverse the foregoing rejections for the following reasons:

(1) Applicants' remarks on submission of August 8, 2008 read in part that "Okisu does not teach or suggest, among other things, 'pixel signals read out from the first light receiving area and the second light receiving area via a same channel,' as recited in claim 1." (see page 6 of Amendment of 8/08/2008).

In response, the Examiner argues that Okisu discloses "the correction device has only one input channel (see figure 9). Therefore, the pixel signals are read out of the first and second light receiving areas (CCD12 and CCD13) and into the correction device (194) via a same channel." (Office Action, pages 2-3).

Applicants respectfully note that claim 1 recites "pixel signals read out from the first light receiving area and the second light receiving area via a same channel". In other words, in claim 1, the pixel signals obtained from the first light receiving area and the second light receiving area are read out via a common (i.e., same) channel. In contrast, the Examiner

correctly identifies that Okisu discloses two image sensing elements (CCD12 and CCD13), each with a separate output channel (see Fig. 9), wherein “the pixel signals read out from the first and second light receiving areas (CCD12 and CCD13) [are entered] *into the correction device (194) ... via a same channel*”. Applicants respectfully assert that the features disclosed by Okisu are neither equivalent nor obvious variants of this subject feature of claim 1. Claim 1 requires signals from two different light receiving areas of a singly image sensing element to be read out via a same channel. In contrast, Okisu discloses signals input into the correction device (194) via a same channel.

(2) In the Office Action, the Examiner contends that “Lin teaches, in figure 1 and paragraph 0013, a plurality of light receiving areas (7A, 8B, 9C) which are formed on an image pickup surface (i.e. top surface) of a semiconductor substrate (sensor chip, 1) by a plurality of divisional exposure operations.” (Office Action, page 3).

Applicants respectfully disagree with the Examiner’s characterization of Lin. Lin discloses “mutually disjoint” light receiving areas, and as such, signals from the mutually disjoint light receiving areas are read out from the sensor on separate pipelines (17, 18 and 19) and processed by corresponding separate processors A22, B24, and C26. (See, e.g., Lin, ¶¶ 0013, 0018, and Fig. 1). Thus, Lin does not disclose “an image sensing element having a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by a plurality of divisional exposure operations”, as previously recited in claim 1.

Notwithstanding the above, and in the interest of expediting prosecution in this application, Applicants have chosen to amend the pending claims as set forth above. In particular, claim 1 has now been amended to more specifically recite the above-discussed features. To that end, Applicants have amended claim 1 to recite *inter alia* “an image sensing element manufactured by a plurality of divisional exposure operations such that the image sensing element includes a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by the plurality of divisional exposure operations, wherein pixel signals obtained by the first light receiving area and the second light receiving area are read out from the image sensing element via a same channel”.

Support for the amendatory language can be found, for example, in the Abstract, FIGs. 1-4, and the specification on pages 12-14.

In accordance with at least one embodiment of the present invention, a plurality of image sensing areas, which are produced by a plurality of divisional exposure operations, are physically and electrically joined. In other words, the joined image sensing areas form a single image sensing element. As a result, the plurality of image sensing areas are not disjointed and do not have overlapping regions, but rather the plurality of adjacent image sensing areas form a single image sensing element. Being that the image sensing areas form a single image sensing element, the image signals of the plurality of image sensing areas are read out via a common (i.e. "same") channel. However, the plurality of image sensing areas, which are produced by a plurality of divisional exposure operations, cause a signal level difference between the plurality of image sensing areas. Therefore, the image sensing apparatus has a correction device to correct the level difference between the plurality of image sensing areas, so as to obtain a high-quality image free from any variation between image sensing regions.

Applicants respectfully submit that none of Okisu or Lin, either taken alone or in combination, disclose or suggest at least the specific features of "an image sensing element manufactured by a plurality of divisional exposure operations such that the image sensing element includes a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by the plurality of divisional exposure operations, wherein pixel signals obtained by the first light receiving area and the second light receiving area are read out from the image sensing element via a same channel", as discussed above and now rephrased in amended claim 1. Independent claim 6 has been amended to recite similar features as those found in claim 1. As a result, independent claims 1 and 6, and claims depending thereupon, are patentably distinguishable over the cited references, either taken individually or in combination.

CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejection of claims and allowance of this application.

AUTHORIZATION

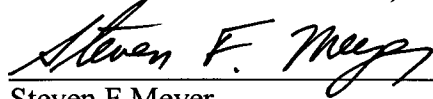
The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 50-4827, Order No. 1232-5154.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 50-4827, Order No. 1232-5154.

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